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FAA-04-18728-5

## Aircraft Certification Service

## Transport Airplane Directorate "Short" Domestic Worksheet

2003-NM-176-AD

DOCKET NUMBER:

TECH WRITER:

**Manufacturer's Service Information/Revision/Date (Attach 2 clean copies):**

Boeing Service Bulletin 747-25A3335, dated July 3, 2003

**PROPOSED CORRESPONDING ACTION:**☐ Emergency ADIs this action one of the following? **ANM-114**☐ Immediately Adopted AD☐ Supersedure of AD (Docket No.)☒ Notice of Proposed Rulemaking☐ Revision of AD (Docket No. TBD)☐ Final rule after NPRM☐ Supplemental NPRM (to Docket No. TBD)

(If FRAN, complete Attachment A.)

(If any of the above is checked, complete Attachment B.)

☐ Other (No-Notice Final Rule)

ACO Project Engineer Name/Title:

Gary Oltman

Ivan Li

Branch: ANM-120S/Airframe Branch

Telephone:

425-917-6443

6437

Backup Engineer: Rick Kawaguchi

Telephone:

425-917-6434

**1. Model, Applicability, # Airplanes (both U.S. & worldwide) - Refer to SB; state any differences for this AD:**

Model: Boeing Model 747 series airplanes as listed in Boeing S/B 747-25A3335, dated July 3, 2003

Applicability: 747-400 / 400F L/N's 1256-1282, except 1268, 1272, 1274, 1275, &amp; 1277

# U.S. airplanes: 3

# worldwide airplanes: 22

Source: Service Bulletin

**AD Summary and Discussion Sections:****2. What has the manufacturer told the FAA?****"The FAA has received reports indicating that..."**

Describe background/events that prompted the AD in 1-2 sentences. Refer to SB 'Reason.'

The side guide support fittings provide lateral and vertical restraint for cargo. Two operators found fractured side guide fittings in the aft lower lobe cargo compartment on 747-400 freighter airplanes that had been in service for less than 16 months. One operator reported 16 fractured side guide fittings on one airplane.

**3a. What is the unsafe condition AND its cause?****"These actions are intended to prevent..."**

Describe unsafe condition and its cause in 2-3 sentences (non-technical terms). Refer to SB 'Reason.'

Latent Failure of the lower lobe side guide support fittings. Operation of the airplane without cargo limitations when it should be operated under missing cargo restraint limitations of the Airplane Weight and Balance Manual. The conveyance rollers were inadequately swagged (manufacturing defect) causing a condition where the inner race can migrate out of the bearing, allowing the roller shell / conveyor plane to drop and the container / pallet (ULD) to impact the side guide fittings. Repeated impact by the ULD can result in fatigue and fracture of the side guide support fittings. (The manufacturing defect has been isolated / corrected.)

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**3b. What is the end-level effect on the airplane?**

**"...which could result in..."**

*Provide a 1-sentence description; use non-technical terms.*

A fractured side guide fitting can result in unrestrained cargo which can damage the airplane structure or systems in flight. Unrestrained cargo is considered a significant event; weight shifting can lead to reduced airplane controllability.

**AD Relevant Service Information Section:**

**4. (Yes or No) Is the corrective action required in this AD considered to be interim action?**

No.

**5. (Yes or No) Is this action considered 'sensitive', or is it related to a Safety Recommendation?**

*(If yes, state why sensitive, and/or provide copy of FAA/NSTB Safety Recommendation.)*

No.

**6. Does the referenced service document include reference to an "operator's equivalent procedure?"**

*[If yes, specify whether that procedure employed by the operator (even if not technically 'equivalent') adequately addresses the identified unsafe condition and provides an acceptable level of safety.]*

No.

**7. AD Differences Section (if needed):**

**"This AD differs from the SB ....**

**Check if :**    **Flight with Cracks**    ☐    **Mandate Terminating Action**    ☐    **Contact Mgr, FAA**    ☐  
                  **Compliance time**    ☐    **Mandate AFM Action**    ☐

*Describe any other differences between service bulletin and this proposed FAA AD.*

**AD Cost Impact Section:**

**8a. Work hours for corrective action(s) required: (List hours or reference SB 'Manpower').**

4.5 work hours each for work packages 1 and 2 (per airplane) for side guide fitting inspection, 0.15 hours per conveyance roller assembly for roller assembly replacement. See S/B.

**8b. Parts Cost, if any: (List costs or reference SB 'Material - Cost and Availability').**

\$. See S/B.

## 9. AD Body Section:

For EACH corrective action, mark up SB, if usable -OR- fill out Corrective Action Table below

### 9a: Action

What is the corrective action?

#### Work Package 1:

Do detailed inspection of all forward and aft lower lobe side guide support fittings per SB Fig 3 (within 180 days)

If cracked or fractured side guide support fittings (SGSF) are found, Do 1 or 2, before further flight (BFF)

- (1) Operate under limitations defined in 747 Weight and Balance Manual for missing restraints until cracked or fractured SGSF are replaced.
- (2) Replace cracked or fractured SGSF per SB Fig 4

If no cracked or fractured SGSF are found, or once cracked or fractured SGSF have been replaced (or if operating with missing restraint per Weight & Balance Manual), repeat inspect all SGSF every 180 days until The outboard conveyance roller assemblies are replaced per SB Fig 5

Optional Terminating Action for all requirements of this AD:  
Replace all outboard roller assemblies per SB Fig 5 during inspection of SGSF.

#### Work Package 2: Do (A) and (B) concurrently, within 18 months

(A): Do detailed inspection of all forward and aft lower lobe SGSF per SB Fig 3

If cracked or fractured SGSF are found, Do 1 or 2, BFF

- (1) Operate under limitations defined in 747 Weight and Balance Manual for missing restraints until cracked or fractured SGSF are replaced.
- (2) Replace cracked or fractured SGSF per SB Fig 4

(B): Replace all outboard roller tray, roller assemblies per SB Fig 5, regardless of apparent condition

What is its compliance time?  
(Add grace period if not available)

Do Work Package 1 within 180 days of the effective date of this AD.

Do Work Package 2 within 18 months of the effective date of this AD.

What is repetitive interval?

For WP1 only:

If no cracked or fractured SGSF are found,  
or if cracked or fractured SGSF have been replaced,

repeat inspect all SGSF every 180 days until the outboard roller assemblies are replaced per SB Fig 5

10. (Yes or No) Should corrective action(s) required in this AD to be applied to spares as well?

No.

11. Should a ferry flight permit be: ☒ Permitted ☐ Permitted with limitations\* ☐ Prohibited ☐

\*List limitations.

12a. With whom outside the FAA has this proposal been discussed (i.e. ATA, RAA, ALPA, etc.)?

NOTE: This item should be completed prior to submission of the AD Proposal Worksheet.

<u>Organization</u>	<u>Person Contacted</u>	<u>Date</u>	<u>Reaction</u>
Boeing	Tom Dorrance	2/2003	Concurs
	Bill Clos	2/2003	Concurs
ATA	Joe White	2/2003	

12b. (Yes or No) Was the lead airline process used in developing the requirements of this action?

13. Check the appropriate response:

Yes ☐ No ☒ Does this action affect the Presidential fleet?

Yes ☐ No ☒ Does this action affect the FAA fleet?

Yes ☐ No ☒ Was this action prompted by the use of suspected unapproved parts (SUP)?

14. Check the category that best describes the cause of the unsafe condition addressed by this AD:

☐ Design Problem

☐ Unapproved Parts

☐ Operational

☐ Maintenance

☒

Quality Control Problem\*\*

☐ Other (specify):

☐ \*\*Reporting Reqt Needed?